

Application No. 10/065,757
Attorney Docket No. 124400

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) In an electron beam tomography (EBT) scanner for scanning a subject during a scanning time interval, a method to generate an image from a data set collected from said subject beginning at an arbitrary time within said scanning time interval, said method comprising:

generating a sequence of temporally separated, unfolded parallel view sinograms corresponding to scans through said subject during a scanning time interval,

wherein said sequence includes a first sinogram and a last sinogram, said first and last sinograms being temporally adjacent;

folding data from a first region of view angles from each of said sinograms into a second region of view angles in a corresponding next temporally adjacent sinogram;

folding data from a third region of view angles from each of said sinograms into a fourth region of view angles in a corresponding previous temporally adjacent sinogram,

wherein said folding data from said first region and said folding data from said third region include combining a last half of said first sinogram with a first half of said last sinogram; and

generating an image from a subset of data taken from said sinograms wherein said subset of data begins at an arbitrary time within said scanning time interval.

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2. (Original) The method of claim 1 wherein said folding comprises:
weighting a first set of data corresponding to one region of view angles of one sinogram and weighting a second set of data corresponding to a different region of view angles of a different corresponding temporally adjacent sinogram to form a first weighted set of data and a second weighted set of data;
summing together said first weighted set of data and said second weighted set of data to form a folded set of data; and
replacing said second set of data with said folded set of data within said different region of view angles.
3. (Original) The method of claim 1 wherein said unfolded parallel view sinograms are generated from fan view sinograms.
4. (Original) The method of claim 1 wherein said generating an image includes applying a reconstruction algorithm to said subset of data.
5. (Original) The method of claim 1 wherein each of said sinograms is gathered over scanning view angles comprising at least a total of π radians.
6. (Original) The method of claim 1 wherein said first region of view angles comprises angles greater than π radians.

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7. (Original) The method of claim 1 wherein said second region of view angles comprises angles greater than 0 radians.

8. (Original) The method of claim 1 wherein said third region of view angles comprises angles less than 0 radians.

9. (Original) The method of claim 1 wherein said fourth region of view angles comprises angles less than π radians.

10. (Original) The method of claim 1 further comprising selecting said arbitrary time within said scanning time interval to determine whether or not an imaged feature is an artifact.

11. (Original) The method of claim 1 wherein said method reduces motion artifacts within said image.

12. (Currently amended) In an electron beam tomography (EBT) scanner for scanning a subject during a scanning time interval, apparatus to generate an image from a data set collected from said subject beginning at an arbitrary time within said scanning time interval, said apparatus comprising:

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a sinogram pre-processing module generating a sequence of temporally separated, unfolded parallel view sinograms corresponding to scans through said subject during a scanning time interval,

wherein said sequence includes a first sinogram and a last sinogram, said first and last sinograms being temporally adjacent;

a sinogram data folding module folding data from a first region of view angles from each of said sinograms into a second region of view angles in a corresponding next temporally adjacent sinogram, and said sinogram data folding module folding data from a third region of view angles from each of said sinograms into a fourth region of view angles in a corresponding previous temporally adjacent sinogram,

wherein said sinogram data folding module combines a last half of said first sinogram with a first half of said last sinogram; and

an image processing module generating image data from a subset of data taken from said sinograms wherein said subset of data begins at an arbitrary time within said scanning time interval.

13. (Original) The apparatus of claim 12 further comprising a monitor to display said image data as a video image.

14. (Original) The apparatus of claim 12 further comprising an electron gun in a vacuum chamber housing to generate an electron beam within said EBT scanner.

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15. (Original) The apparatus of claim 12 further comprising at least one X-ray target to generate at least one fan beam of X-rays when impinged upon by an electron beam of said EBT scanner.

16. (Original) The apparatus of claim 12 further comprising a detector array to detect X-rays emitted by at least one X-ray target of said EBT scanner.

17. (Original) The apparatus of claim 12 further comprising a system control module to control various functions of said EBT scanner including scanning.

18. (Original) The apparatus of claim 12 wherein said first region of view angles comprises angles greater than π radians.

19. (Original) The apparatus of claim 12 wherein said second region of view angles comprises angles greater than 0 radians.

20. (Original) The apparatus of claim 12 wherein said third region of view angles comprises angles less than 0 radians.

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21. (Original) The apparatus of claim 12 wherein said fourth region of view angles comprises angles less than π radians.

22. (Original) The apparatus of claim 12 wherein said apparatus reduces motion artifacts within said image.